

# ERIOPHYID STUDIES B-13

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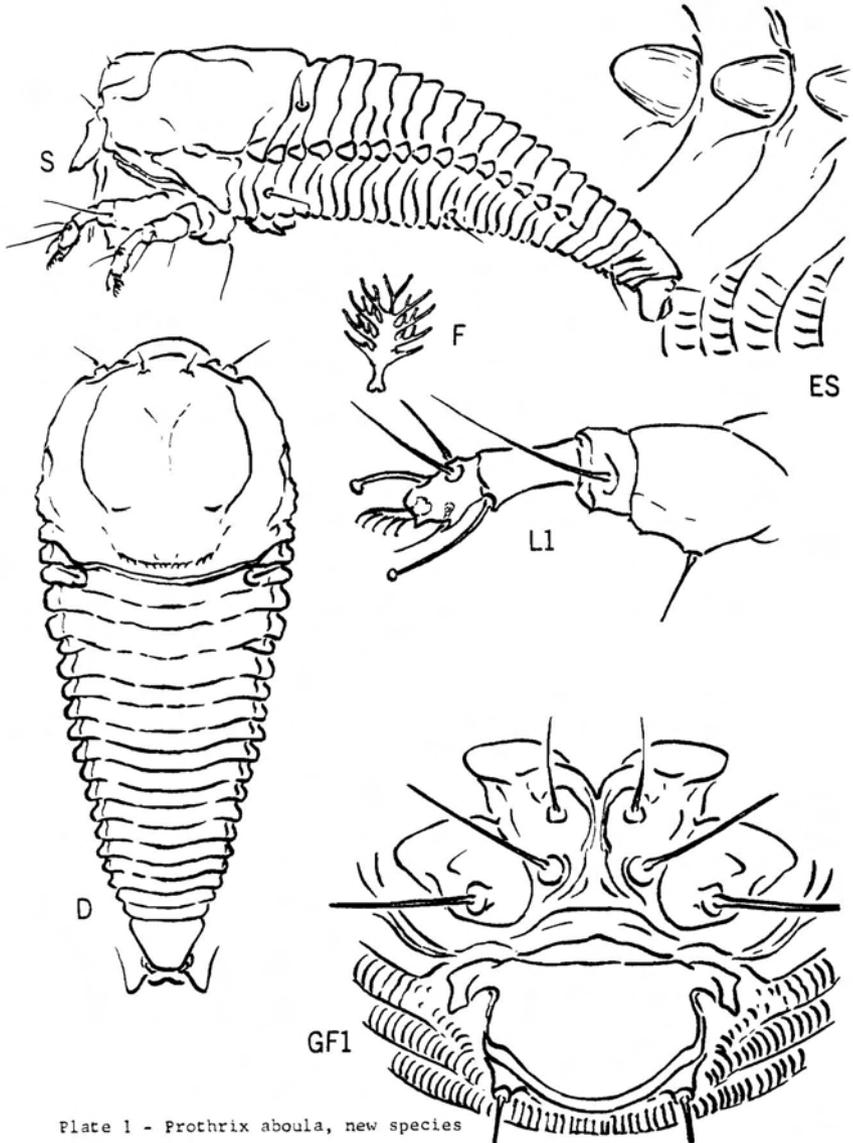


Plate 1 - *Prothrix aboula*, new species

ISSUED - March 2, 1965

## Prothrix, new genus

The distinctive features of this genus are: dorsal shield tubercles moved far forward; foretibial seta absent and lateral spur slender and knobbed like the claw; abdominal dorsum but slightly raised longitudinally, laterally the abdomen with a projecting ridge; first ventral seta missing; abdominal caudal rings fused dorsally. The name is a combination of forward and hair.

Fusiform Phytoid mites somewhat flattened, broadest behind shield. Shield subquadrate, a broad anterior lobe projecting over rostrum base; shield dorsum flat in side view. Dorsal tubercles moved forward to upper curve of hump; anterior shield setae from tubercles just above anterior lobe base (below dorsal tubercles). Rostrum short, with short type oral stylet. Legs with all segments and setae except foretibial seta; patellar seta situated laterally on both legs; foretibial lateral spur slender, curved, knobbed. All coxal setiferous tubercles present. Abdomen divided laterally into tergites and sternites; subdorsal setiferous tubercle placed laterally on second tergite. Dorsally the tergites but gently curved; a lateral tergal ridge from shield to just ahead of third ventral seta. Rings past this third seta fused dorsally. First lateral seta missing. Female genitalia apparently with short-stalked recurved spermathecae.

Genotype - *Prothrix aboula*, new species

*Prothrix aboula*, new species

Plate 1

The description of this mite violates two cardinal rules of Eriophyoid description writing by lacking both host and locality data. It would not be published but the mite adds so much to our conception of the Phytoididae that it is useful to know about it and it will be easily recognized when properly associated.

Female 190 $\mu$  long, 72 $\mu$  wide, 60 $\mu$  thick; fusiform, broad anteriorly, tapering to rear. Rostrum 28 $\mu$  long, the antapical seta 8 $\mu$  long. Shield 66 $\mu$  long, 70 $\mu$  wide, subquadrate. No lines on shield. Dorsal tubercles moved far forward to top of anterior hump, 10 $\mu$  apart, the seta 6 $\mu$  long and projecting up; anterior shield tubercles below dorsal tubercles and above broad anterior lobe, 31 $\mu$  apart, the seta 5 $\mu$  long. Forelegs 33 $\mu$  long; tibia 9 $\mu$  long, lateral spur 6.5 $\mu$  long; tarsus 5 $\mu$  long; claw 6 $\mu$  long, knobbed; featherclaw 5-rayed. Hindleg 31 $\mu$  long, tibia 6 $\mu$  long, tarsus 7 $\mu$  long, claw 5 $\mu$  long. Coxae not ornamented the anterior coxae approximate centrally, no definite sternal apodeme line; first setiferous coxal tubercles ahead of second but behind anterior coxal approximation; second tubercles not far ahead of line across third tubercles. Abdomen with about 18 tergites and 39 sternites to ring with third ventral seta; with lateral ridge back to 3 or 4 rings ahead of this seta. Subdorsal seta on side of second tergite and 4 $\mu$  long. Microtubercles confined to sternites and present as elongate streaks. Lateral seta from about sternite 3, 15 $\mu$  long; first ventral seta missing; second ventral 20 $\mu$  long, on sternite 19; third ventral 13 $\mu$  long, on ring 5 from rear. No accessory seta. Female genitalia 26 $\mu$  wide, 18 $\mu$  long; coverflap unornamented; seta 15 $\mu$  long.

Type locality: Philippine Islands and received under #64-621969 from the USDA. Originally submitted by W. H. Sill Jr., Kansas State University, Manhattan

Type material: a type slide the property of the USDA  
two paratype slides

Note: part of the mites on these slides proved to be a species of *Rhyncho-phytopus* upon microscopic examination. But they are easily separated from the new genus and species when properly magnified.

## Dechela, new genus

Body wormlike, with short broad shield projection over chelicera base and with body rings rather narrow and approximately equal dorsoventrally. Rostrum small, with short form oral stylet. Shield lacking setae. Forelegs with femoral and patellar setae, lacking tibial seta; tarsi with two regular setae and prominent ventral seta, but with claw displaced downward on inside to position below empodium (featherclaw); empodial rays fewer in number on inner side. Hindlegs with femoral seta, lacking patellar seta; tarsus with claw in usual position above empodium. Coxae lacking first setiferous tubercle and seta, the anterior coxae apparently partly fused. Abdomen with all setae except accessory, the lateral seta projecting forward and up. Genitalia moderately appressed to coxae. Internal genital apodeme short.

Judging from the shortened female genital apodeme and the missing dorsal setae this genus is allied to *Cecidophyes*. The name is down plus claw.

Genotype - *Dechela epelis*, new species

*Dechela epelis*, new species

## Plate 2

Female 175<sub>u</sub>-190<sub>u</sub> long, 42<sub>u</sub>-45<sub>u</sub> thick; elongate worm-like; color in life probably dull whitish. Rostrum 19<sub>u</sub> long, downcurved; antapical seta 3.5<sub>u</sub> long. Shield 26<sub>u</sub> long, 32<sub>u</sub> wide, subtriangular, anterior lobe over rostrum base moderately wide but hardly projecting. Shield lacking design, covered with faint longitudinal dashes. Shield sides somewhat bulging, with lines of granules curving up near rear margin. Forelegs 20<sub>u</sub>-21<sub>u</sub> long; tibia 3<sub>u</sub> long, lacking seta; tarsus 5<sub>u</sub> long; claw 4<sub>u</sub> long, straight or slightly curved laterally; featherclaw 7-rayed on outside, 5-rayed inside. Hindleg 20<sub>u</sub> long, tibia 2<sub>u</sub> long, tarsus 5<sub>u</sub> long, claw straight and 10<sub>u</sub> long; featherclaw as on foreleg. Coxae with curved lines of granules or short dashes, anterior coxae narrowly connate or fused; second setiferous coxal tubercles ahead of line across third tubercles. Abdomen with about 62 rings, completely microtuberculate, the microtubercles round and bead-like on rear margins but each with an anterior line extending ahead. Lateral seta 15<sub>u</sub> long, on ring 6-8 behind shield, projecting up and forward; first ventral seta 36<sub>u</sub> long, on ring 19; second ventral 42<sub>u</sub> long, on ring 37; third ventral 14<sub>u</sub> long, on ring 4-5 from rear. Accessory seta absent. Female genitalia 16<sub>u</sub> wide, 11<sub>u</sub> long; coverflap with transverse and gently curved lines of granules and dashes; seta 13<sub>u</sub> long.

Male similar to female but smaller.

Type locality: Guinobatan, Albay Province, Philippines

Collected: April 17, 1963, by Magdalena Briones and sent on leaves with injury under her number VI.

Host: stated to be *Bixa* sp. However, the precise identification of this plant is in doubt and *Bixa* is a shrub of the American tropics imported into the Philippines. This would seem to make it more likely that the host is in reality a native Philippine plant since there is a complex of Eriophyids on the submitted leaves.

Relation to host: the mites were in erineum on the leaves.

Type material: a type slide

5 paratype slides

additional leaves with erineum and mites

While the host identity is in question the distinct features of this mite should make its recognition easy once the host is established.

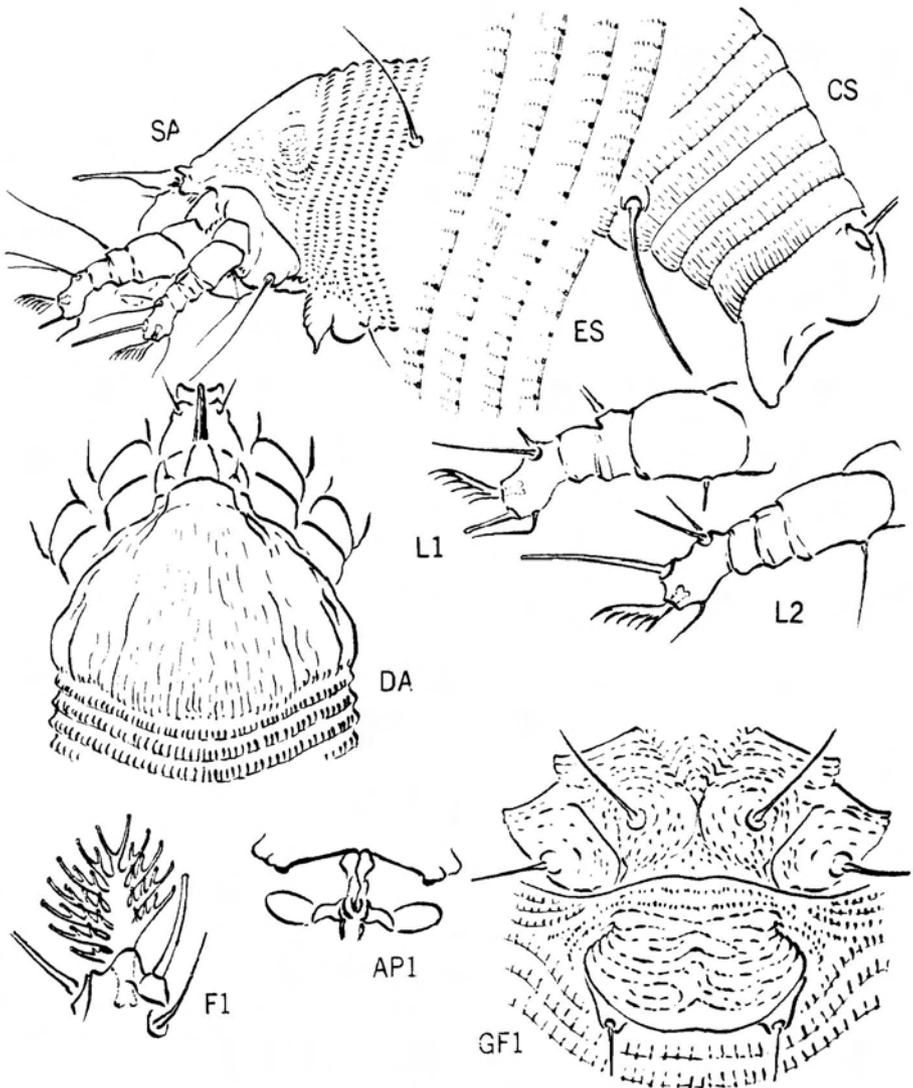


Plate 2 - *Dacnusa epolis*, new species

Nalepa described Phytoptus fraxinicolus in the Sitzber. Akad. Wiss. Wien 99:48, 1890, stating it caused "nagelgallen" on the leaves of Fraxinus excelsior L. in Europe. In the 1910 Zoologica he depicts it as having a smooth shield and rings lacking microtubercles. The mite here designated chondriphora has a deutogyne like Nalepa's fraxinicolus but the protogyne has a very granular shield and abdominal rings completely microtuberculate. The new species makes bead galls on ash leaves rather than nail-like galls. Nalepa's species needs further study.

*Aceria chondriphora*, new species

Plate 3

Protogyne 210<sub>u</sub>-260<sub>u</sub> long, 55<sub>u</sub>-70<sub>u</sub> thick; a rather robust worm-like mite, a light dull yellow in life. Rostrum 24<sub>u</sub> long, curved down; antapical rostral seta 6<sub>u</sub> long. Shield 42<sub>u</sub> long, 48<sub>u</sub> wide; design mainly of lines of granules. Median line faintly indicated in center and toward rear of shield. Admedian lines fairly complete, solid and moderately close for first 1/4 at chelicera base where they meet a transverse line from side, gently out-arched from there to just beyond 1/2, meeting a granular central cross line; diverging rather strongly beyond 3/4 where they fork ahead of rear margin, the inner lines meeting centrally at about rear median line. First submedian line from chelicera base, just outside admedian, curved ending at 1/4 cross line; second submedian branching from first, forking at 1/4 cross line, the inner fork faintly dividing ahead of dorsal tubercle, the outer continuing back as upper lateral line. Shield sides curved in dorsal view, with lines of granules and with partial rings below dorsal tubercle. Dorsal tubercles 23<sub>u</sub> apart; dorsal setae 17<sub>u</sub>-20<sub>u</sub> long, diverging to rear. Forelegs 36<sub>u</sub>-39<sub>u</sub> long; tibia 9<sub>u</sub>-11<sub>u</sub> long, with 6<sub>u</sub> seta at 1/4; tarsus 8<sub>u</sub>-10<sub>u</sub> long; claw 7<sub>u</sub>-8<sub>u</sub> long; featherclaw 3-rayed. Hindlegs 34<sub>u</sub> long, tibia 8<sub>u</sub> long, tarsus 9<sub>u</sub> long, claw 8<sub>u</sub> long. Coxae with coarse granules; anterior coxae broadly connate; first setiferous coxal tubercles slightly more wide-spread than second and a little behind anterior coxal approximation; second tubercles ahead of line across third setiferous coxal tubercles. Abdomen with 70-80 rings. Rings completely microtuberculate, the microtubercles on ring margins, mostly rounded, but somewhat produced dorsally and tending toward acumination on dorsal rear. Lateral seta 27<sub>u</sub> long, on ring 11-14 behind shield; first ventral seta 47<sub>u</sub> long, on ring 29-30; second ventral 11<sub>u</sub> long, on ring 51; third ventral 26<sub>u</sub> long, on ring 6 from rear. Accessory seta about 1<sub>u</sub> long. Female genitalia 23<sub>u</sub> wide, 16<sub>u</sub> long; coverflap unornamented; seta 13<sub>u</sub> long. Male similar to protogyne, about 200<sub>u</sub> long.

Duetogyne 200<sub>u</sub>-220<sub>u</sub> long, 52<sub>u</sub>-56<sub>u</sub> thick; shield lacking granulations and no microtubercles on rings; accessory seta 1<sub>u</sub>-2<sub>u</sub> long.

Type locality: Allen Springs, Lake County, California

Collected: July 28, 1964, by Tokuwu Kono and H. H. Keifer

Host: Fraxinus latifolia Benth. (Oleaceae) Oregon ash

Relation to host: the mites form masses of bead galls on the leaves with most of the openings on the lower surface.

Type material: a type slide with the above data  
five paratype slides  
dry ash leaves with bead galls and the above data

In addition, what presumably is this mite has been examined from the following localities: Trinity Center, Trinity Co., Cal.; Host: Fraxinus latifolia, collected July 27, 1957, by H. K. Wagnon (in this case there is no doubt). Dumfries, Virginia; host: Fraxinus americana L., collected July 5, 1964, by J. P. Keifer. Ithaca, N. Y.; host: Fraxinus americana L., collected Sept. 20, 1960 by G. R. Nielsen. Grand Isle, Vermont; host: Fraxinus pennsylvanica lanceolata Bork., collected July 5, 1963 by G. R. Nielsen. Montreal, Ont.; host: Fraxinus sp., collected June 23, 1959 by A. E. Straby. Ashland, Wisc.; host: Fraxinus sp., collected July 16, 1964 by R. Skoraczewski. There is considerable variation throughout this series in the intensity of the protogyne shield lines and the divergence or convergence of the dorsal setae. Otherwise the individuals agree reasonably well.

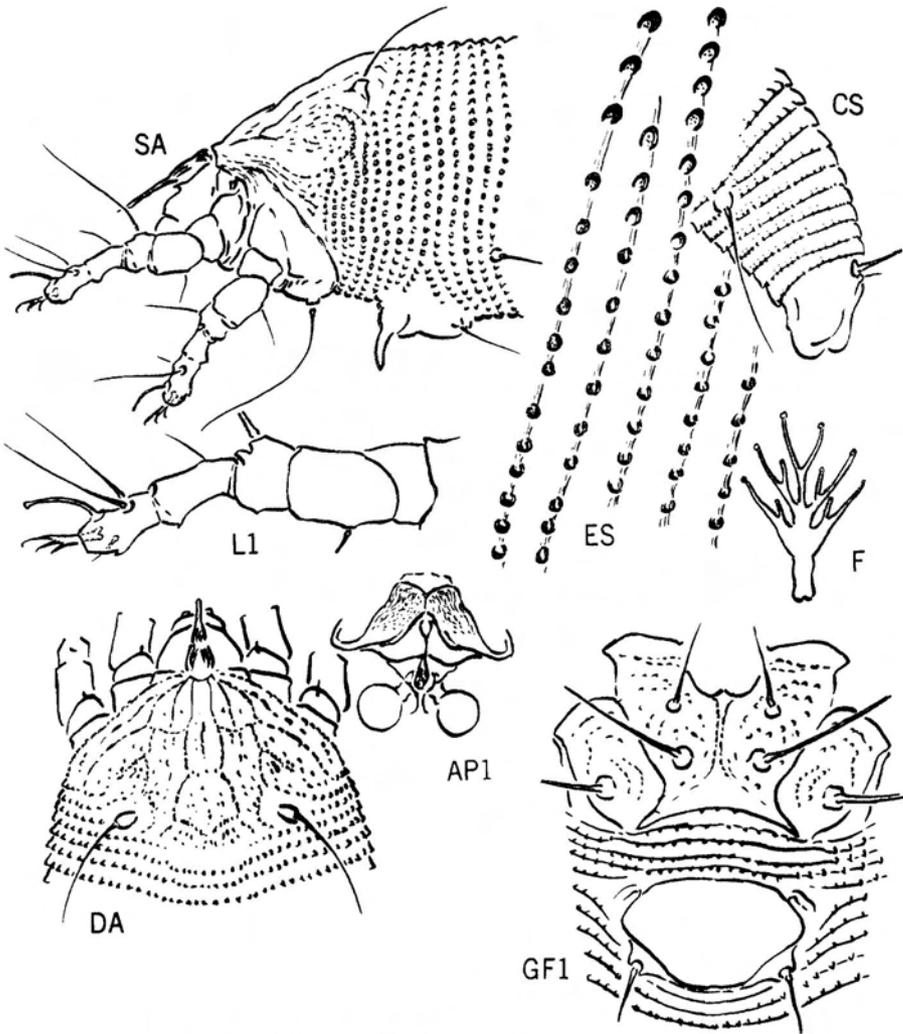


Plate 3 - *Aceria chondriphora*, new species

## Aceria caborcensis, new species

## Plate 4

In common with many other Acerias on Composites, this one has pointed or short-spinulated microtubercles and a clear-cut shield design. From Aceria astibonis K., which lives among the surface hairs on the leaves of its host (a Franseria also), the new species differs in having one less ray on the featherclaws. In broader considerations the new species is distinctive by having three converging lines below the dorsal tubercles on each side.

Female 190<sub>u</sub>-210<sub>u</sub> long, about 40<sub>u</sub> thick, wormlike, color dull cream-white. Rostrum 16<sub>u</sub> long, curving down; antapical seta 4<sub>u</sub> long. Shield 26<sub>u</sub> long, 30<sub>u</sub> wide. Shield design prominent; median line on rear 3/4, sinuate, slight lateral lines. Admedian lines complete, close anteriorly, diverging around median line and recurving at rear margin. First submedian line curving out from above chelicera base, then winding back subparallel to admedian and forking ahead of dorsal tubercle. Second submedian and lateral line from first outcurve of first submedian, extending to rear and converging with lower fork of first submedian below and a little ahead of dorsal tubercle. Shield laterally with partial rings and granulations. Dorsal tubercles 13<sub>u</sub> apart; dorsal setae 23<sub>u</sub>-32<sub>u</sub> long. Forelegs 23<sub>u</sub> long; tibia 4<sub>u</sub> long with 6<sub>u</sub> seta at 1/4; tarsus 6<sub>u</sub> long; claw 3<sub>u</sub> long, somewhat curved, tapering; featherclaw 4-rayed. Hindlegs 21<sub>u</sub> long, tibia 3.5<sub>u</sub> long, tarsus 5<sub>u</sub> long, claw 8<sub>u</sub> long. Coxae with pattern of lines, the anterior coxae broadly connate centrally; first coxal tubercles slightly closer than second and a little behind anterior coxal approximation; second setiferous coxal tubercles ahead of transverse line across third tubercles. Abdomen with 63-73 rings, the rings entirely microtuberculate, these microtubercles pointed and spinulate. Lateral seta 22<sub>u</sub> long, on about ring 6 behind shield; first ventral 36<sub>u</sub> long, on about ring 16; second ventral 10<sub>u</sub> long, on ring 23; third ventral 18<sub>u</sub>-19<sub>u</sub> long, on ring 6 from rear. Accessory seta 3<sub>u</sub>-5<sub>u</sub> long. Female genitalia 18<sub>u</sub> wide, 10<sub>u</sub> long; coverflap with 7-8 longitudinal ribs; seta 8<sub>u</sub>-11<sub>u</sub> long.

Type locality: on Caborca-Lukeville road, Sonora, Mexico

Collected: January 10, 1963, in quarantine at Nogales, Arizona, and sent to me under USDA #63-5934

Host: Franseria sp. (Compositae)

Relation to host: the mites form irregular leaf galls

Type material: type slide, so designated, property of USDA  
 five paratype slides  
 dry leaves from which the slides were made

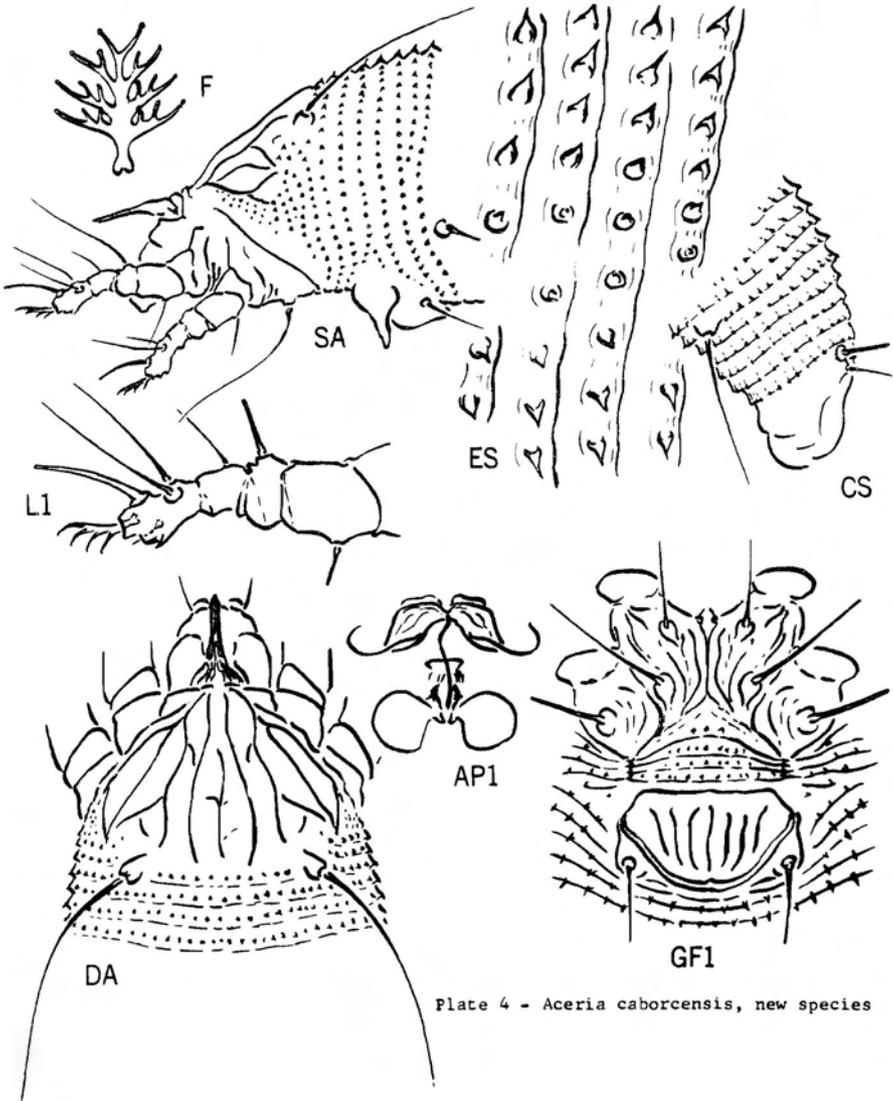


Plate 4 - *Aceria caborcensis*, new species

Garman, on p. 187 of the Twelfth Report of the State Entomologist, Ill. 1883, named Phytoptus ulmi, new species, causing galls on leaves of Ulmus americana L., and stating: "-- a slender species, with from 67 to 70 strigae. Prongs of the feather-like tarsal appendage, three. Length of specimens in alcohol .17mm." The common mite forming galls on elm leaves in North America in one with what would be called a 2-rayed featherclaw, but perhaps we can harmonize this with Garman's statement.

Nalepa, in the 1910 Zoologica, pp.222 and 223, lists Eriophyes ulmicola Nal., 1890 and E. brevipunctatus Nal., 1889, as causing galls on the European Ulmus campestris (now procera), and on U. pedunculata, respectively. I have examined mites from bead-like leaf galls on various elms from Alberta, Canada, to the Atlantic coast of North America, from England and from the Island of Cyprus. In all of these galls two types of mites appear: one with heavily granular shield and completely granulated rings; the other with nearly smooth shield and with ring granulations ventral only. But these two types are the same in the position of the dorsal shield setae and in both having the 2-rayed featherclaw. Since they are invariably found together it is my opinion that they all represent Garman's ulmi, with Nalepa's ulmicola as the deutogyne, and brevipunctatus as the protogyne. I am indebted to Dr. R. H. Richens, Commonwealth Bureau of Plant Breeding and Genetics, Cambridge, England, for specimens from England and Cyprus.

*Aceria parulmi*, new species

Plate 5

The new species, parulmi, is quite distinct from ulmi Garman, having a 5-rayed featherclaw as one difference. The galls from which the mites came are elongate and finger-like. The galls of ulmi are bead-like.

Female 190 $\mu$ -220 $\mu$  long, 30 $\mu$ -35 $\mu$  thick; elongate, wormlike; color in life probably a dull cream-white. Rostrum 19 $\mu$  long, curving down; antapical seta 5 $\mu$  long. Shield 23 $\mu$  long, 29 $\mu$  wide; pattern distinct: median line present except on anterior 1/3, broken, ending at rear in a dart-shaped mark. Admedian lines complete, close together anteriorly, subsinuate, gradually diverging to rear and curving inward slightly at rear margin. First submedian line a row of granules from near side of chelicera base, ending at dorsal tubercles. Sides of shield heavily granular, some half rings below dorsal tubercles. Dorsal tubercles 13 $\mu$  apart; dorsal setae 30 $\mu$ -22 $\mu$  long, diverging to rear. Forelegs 28 $\mu$  long; tibia 6 $\mu$  long, with 5 1/2  $\mu$  seta at 1/3; tarsus 7 $\mu$  long; claw 9 $\mu$  long, curved, slightly enlarged apically; featherclaw 5-rayed. Hindlegs 26 $\mu$  long, tibia 4 $\mu$  long, tarsus 6 $\mu$  long, claw 9 $\mu$  long. Coxae with coarse granules, anterior coxae somewhat elongate; first setiferous coxal tubercles ahead of second and opposite anterior coxal approximation; second setiferous coxal tubercles well ahead of line across third coxal tubercles. Abdomen with 60-65 rings; rings completely microtuberculate, the microtubercles more elongate orsally and touching rear ring margins, the ventral microtubercles smaller and ahead of ring margins; caudal microtubercles small, on ring margins, a line ahead from each. All microtubercles rounded off except for those slightly acuminate at rear. Lateral seta 13 $\mu$ -15 $\mu$  long, on about ring 7; first ventral seta 46 $\mu$  long, on ring 18; second ventral 7 $\mu$  long, on ring 34; third ventral 20 $\mu$  long, on ring 5 from rear. Accessory seta 2 $\mu$  long. F male genitalia 12 $\mu$  long, 19 $\mu$  wide; coverflap with 6-8 irregular, rather broad, longitudinal ribs; seta 12 $\mu$  long.

Type locality: Beloit, Wisconsin

Collected: July 21, 1934, by G. F. Hafstad

Host: Ulmus americana L (collector's identification)

Relation to host: The mites produce finger-like upper surface leaf galls.

Type material: a type slide so labeled with a number of specimens  
three paratype slides  
dry leaves bearing galls from which the slide specimens came

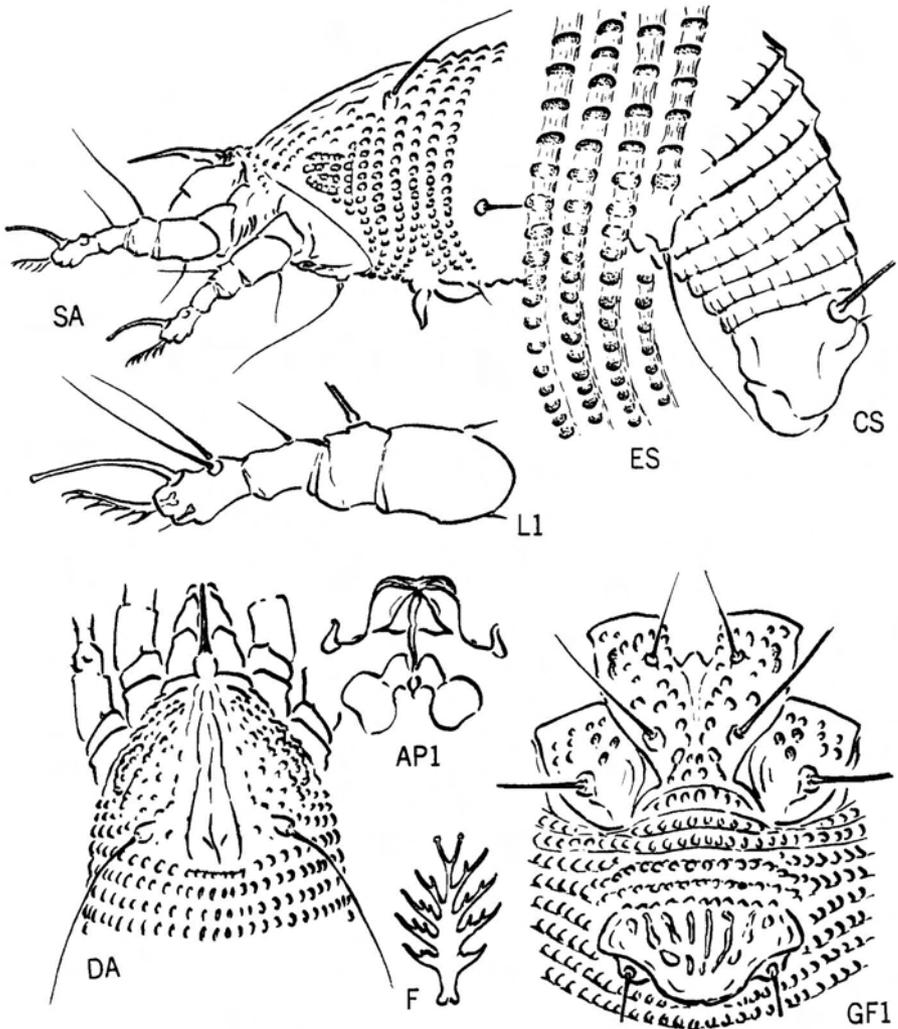


Plate 5 - *Aceria parulmi*, new species

*Aceria burnleya*, new species

## Plate 6

The long tibiae and 7-rayed featherclaw characterize this mite. An examination of literature pertaining to other Eriophyids of this genus that attack *Acacia* discloses only 4 and 5-rayed featherclaws.

Female 200<sub>u</sub>-230<sub>u</sub> long, 45<sub>u</sub>-50<sub>u</sub> thick; body elongate, wormlike; color in life probably cream-white. Rostrum 36<sub>u</sub> long, curved down; antapical seta 10<sub>u</sub> long. Cephalothoracic shield 33<sub>u</sub> long, 42<sub>u</sub> wide, subtriangular; a short projection over rostrum base. Shield pattern of lines interspersed with numerous short dashes, lateral granules. Median shield line faint. Admedian lines complete, well separated, running from sides of short anterior suprarostral lobe back to rear margin, sinuate, gradually diverging and flaring somewhat to rear. Submedian shield line faint, subparallel to admedian, meeting cross line at 1/3 and ending ahead of dorsal tubercle; upper lateral part of shield with lines forming row of cells, followed by partial rings below dorsal tubercle and with broad band of granules above coxae. Dorsal tubercles 30<sub>u</sub> apart; dorsal setae 38<sub>u</sub>-40<sub>u</sub> long, diverging to rear. Forelegs 43<sub>u</sub> long; tibia 12<sub>u</sub> long, with 11<sub>u</sub> seta at about 1/5; tarsus 7.5<sub>u</sub> long; claw 7<sub>u</sub> long, slight knob; featherclaw 7-rayed. Hindleg 40<sub>u</sub> long, tibia 10<sub>u</sub> long, tarsus 7<sub>u</sub> long, claw 8<sub>u</sub> long. Coxae heavily granular; anterior coxae broadly connate centrally, the first setiferous coxal tubercles ahead of second and slightly behind anterior approximation of the rather long forecoxae. Second setiferous coxal tubercles slightly ahead of line across third tubercles. Abdomen with about 80 rings from shield to third ventral seta, completely microtuberculate, the microtubercles more elongate dorsally and touching rear ring margins, more beadlike ventrally and ahead of margins. Microtubercles rounded off, unproduced. Lateral setiferous tubercle on about ring 9 behind shield, the seta 22<sub>u</sub> long; first ventral tubercle on ring 27, the seta 44<sub>u</sub> long; second ventral tubercle on ring 48, the seta 11.5<sub>u</sub> long; third ventral setiferous tubercle on ring 5 from rear, the seta 28<sub>u</sub> long. Abdominal cauda with microtubercles as points on ring margins, preceded by lines. Accessory seta 6<sub>u</sub> long. Female genitalia 22<sub>u</sub> wide, 17<sub>u</sub> long; coverflap with about 18 longitudinal ribs; seta 8<sub>u</sub> long.

Male 150<sub>u</sub>-180<sub>u</sub> long.

Type locality: Burnley Gardens, Victoria, Australia

Collected: August 19, 1964, by D. S. Morris, Senior Entomologist, Plant Research Laboratory

Host: *Acacia saligna*

Relation to host: the mites are said to form large leaf blisters

Type material: a type slide  
five paratype slides

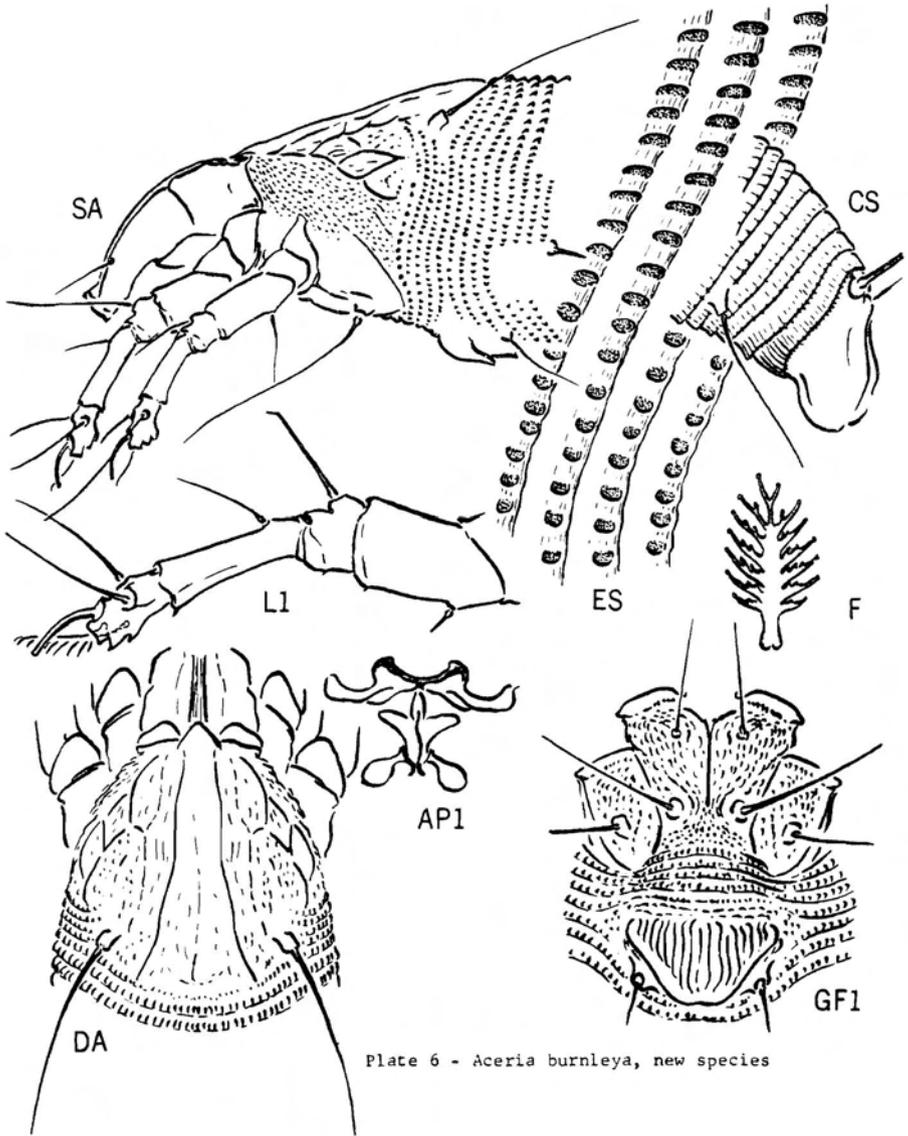


Plate 6 - *Aceria burnleya*, new species

## Phyllocoptes wisconsinensis, new species

## Plate 7

The widespread rust mite which damages elderberry leaves is Epitrimerus trilobus (Nal.). This new species apparently does about the same damage to elderberry as trilobus but lacks the middorsal ridge on the protogyne that trilobus has. From other Phyllocoptes with 4-rayed featherclaws the new species differs by the obscure shield pattern and complete microtuberculation on the rings.

Female 190<sub>u</sub>-210<sub>u</sub> long, 65<sub>u</sub>-70<sub>u</sub> thick; fusiform; color whitish-yellow. Rostrum 24<sub>u</sub> long, curved down; antapical seta 7<sub>u</sub> long. Shield 46<sub>u</sub> long, 60<sub>u</sub> wide, subtriangular. Suprarostrol lobe short. Shield design obscure; median line not apparent; admedian lines faint but complete from sides of lobe, diverging to rear margin between dorsal tubercles. Shield granular above coxae. Dorsal tubercles about 19<sub>u</sub> apart; dorsal setae 10<sub>u</sub> long, projecting up and centrally. Forelegs 27<sub>u</sub> long; tibia 9<sub>u</sub> long, with 5.5<sub>u</sub> setae  $\frac{1}{3}$ ; tarsus 8.5<sub>u</sub> long; claw 7<sub>u</sub> long, knobbed; featherclaw 4-rayed. Hindleg 35<sub>u</sub> long, tibia 8<sub>u</sub> long, tarsus 8<sub>u</sub> long, claw 7.5<sub>u</sub> long. Coxae somewhat ornamented with granules, the sternal line between forecoxae obscure; first setiferous coxal tubercles farther apart than second and slightly behind anterior coxal approximation; second tubercles a little ahead of line across third setiferous coxal tubercles. Abdomen with about 49 tergites and 68 sternites between rear shield margin and third ventral seta ring; abdomen equally microtuberculate dorso-ventrally, the microtubercles larger and more elongate dorsally, slightly produced and touching rear margins; ventrally the microtubercles more beadlike and tending to be ahead of ring margins. Lateral seta 34<sub>u</sub> long, on about sternite 9; first ventral seta 41<sub>u</sub> long, on sternite 26; second ventral 15<sub>u</sub> long, on sternite 47; third ventral 23<sub>u</sub> long, on ring 6 from rear. Accessory seta 5<sub>u</sub> long. Female genitalia 24<sub>u</sub> wide, 15<sub>u</sub> long; basally with transverse lines, the coverflap with 11-12 longitudinal ribs; seta 30<sub>u</sub> long.

Male about 180<sub>u</sub> long.

Deutogyne about size of protogyne but with microtubercles lacking on tergites.

Type locality: Madison, Wisconsin

Collected: July 15, 1964, by D. H. Custer

Host: Sambucus canadensis L. (Caprifoliaceae) American elder

Relation to host: the mites discolor and rust the leaves, also causing some twisting and other deformation.

Type material: a type slide  
six paratype slides  
dry leaves from which the slides were made

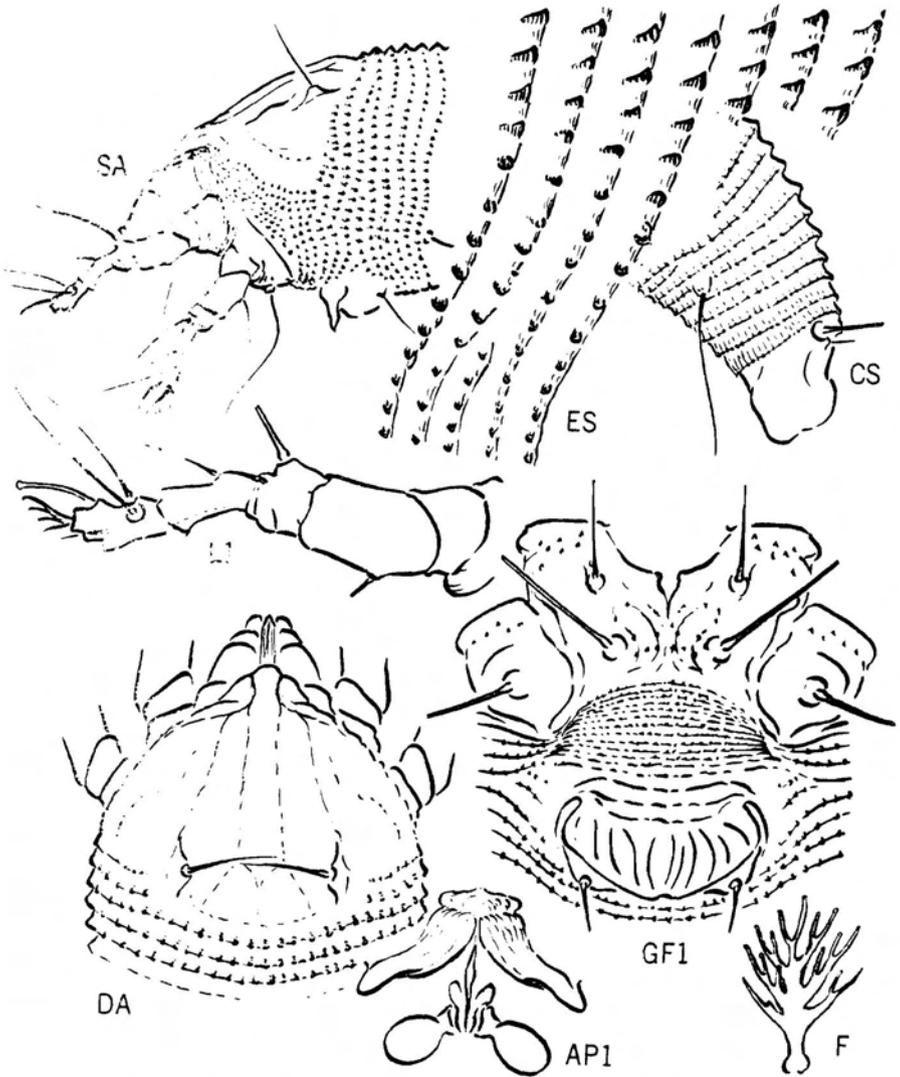


Plate 7 - *Phyllocoptes wisconsinensis*, new species

## Phylloptes calisorbi, new species

## Plate 3

This mite is similar to Phylloptes abaeus K. but differs in the pebbled surface of the shield and in the type of injury it causes on its host. Abaenus is a leaf vagrant, the new species forms erineum.

Female 130<sub>u</sub>-210<sub>u</sub> long, 55<sub>u</sub>-60<sub>u</sub> thick; rather robust, weakly fusiform; color in life whitish. Rostrum 20<sub>u</sub> long, projecting down; antapical seta 6<sub>u</sub> long. Shield 45<sub>u</sub> long, 43<sub>u</sub> wide, subtriangular. Anterior shield lobe projecting shortly over rostrum base but thick in side view with transverse crenulations. Shield design of curved or sinuate lines: median line from within anterior lobe at about 1/5, starting with the first cross line, extending to rear shield margin, meeting a second cross line at about 1/3, and with a rear-pointing dart-shaped mark at about 3/4; admedian lines complete from sides of anterior projection of anterior lobe, meeting the cross lines at 1/5 and 1/3, gradually diverging but slightly recurved at rear end. Faint elongate cells at sides of anterior lobe. Submedian line curving inward from first cross line to second cross line, then curving outward, forking in front of dorsal tubercles, one fork running back inside tubercles, the other curving around outside of tubercles. Shield laterally with more or less prominent longitudinal lines, the upper one continuing back from first cross shield line and forking below dorsal tubercles, the sides of shield with more or less prominent coarse granules. Dorsal tubercles 20<sub>u</sub> apart; dorsal setae 14<sub>u</sub>-17<sub>u</sub> long, projecting up and caudad. Foreleg 33<sub>u</sub> long; tibia 7<sub>u</sub> long, with 6<sub>u</sub> seta at 2/3; tarsus 8<sub>u</sub> long; claw 9<sub>u</sub> long; featherclaw 4-rayed. Hindlegs 32<sub>u</sub> long, tibia 9<sub>u</sub> long, tarsus 8<sub>u</sub> long, claw 9<sub>u</sub> long. Coxae with obscure curved lines the anterior coxae narrowly connate centrally; first setiferous coxal tubercles farther apart than second and opposite anterior coxal approximation; second tubercles a little ahead of line across third setiferous coxal tubercles. Abdomen with about 45 tergites and but few more sternites there being little dorso-ventral difference; abdominal microtubercles round, rather large and prominent. Lateral seta 21<sub>u</sub> long, on about sternite 6; first ventral 52<sub>u</sub> long, on sternite 16; second ventral 11<sub>u</sub> long, on sternite 29; third ventral seta 21<sub>u</sub> long, on ring 5 from rear. Accessory seta very minute. Female genitalia 25<sub>u</sub> wide, 14<sub>u</sub> long; coverflap with basal cross lines and dashes, the main part with diagonally converging curved lines running from sides toward rear center; seta 7<sub>u</sub> long.

Male about 140<sub>u</sub> long.

Type locality: Twin Bridges, El Dorado County, California

Collected: August 25, 1964, by the writer

Host: Sorbus californica Greene (Rosaceae) mountain ash

Relation to host: the mites form erineum patches on the undersides of the leaflets. These patches are at first white, later turning brown. Shrubs in shade are the ones most effected.

Type material: a type slide bearing the above data  
three paratype slides with the above data  
four paratype slides from same host, collected at Pitt Lake, El Dorado County, Aug. 25, 1964, by G. M. Buxton  
dry leaves from Twin Bridges collected Aug, 25 by H. H. K

Note: a mite, apparently the same as calisorbi, has recently come from Sorbus leaf erineum taken from a shipment from Japan to the Hawaiian Islands, July 27, 1964, and sent under USDA #64-20594.

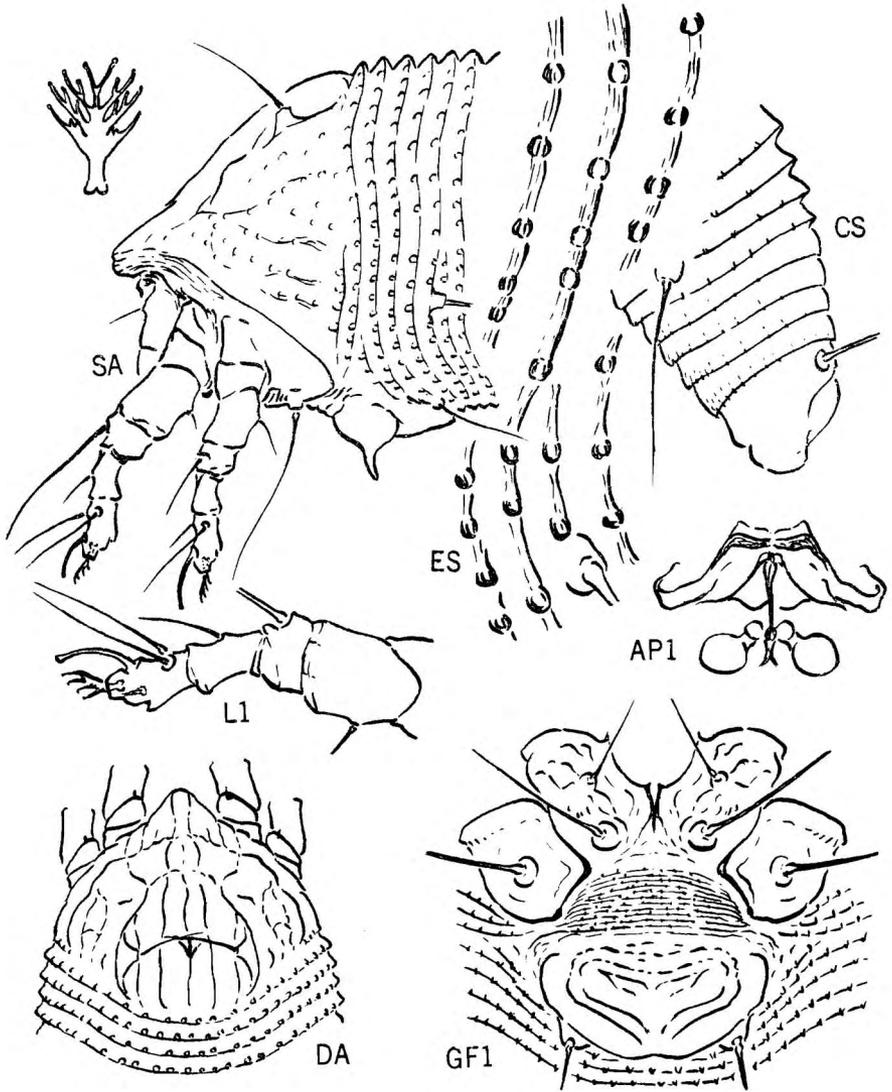


Plate 8 - *Phyllocoptes calisorbi*, new species

## Calepitrimerus fagisylvaticus, new species

## Plate 9

This species has a median ridge on the abdomen ending at the 45th tergite, and it has a five rayed featherclaw. At this writing I know of no mite on European Fagus with this combination of characters. Fogel and Coosmann have named an Epitrimerus fagi, but they attribute to it divided featherclaws.

Female 130<sub>u</sub>-140<sub>u</sub> long, 30<sub>u</sub>-35<sub>u</sub> wide, 30<sub>u</sub> thick; fusiform; color probably light yellow in life. Rostrum 20<sub>u</sub> long. Shield elongate-subtriangular, the sides bulging in dorsal view. Anterior shield lobe projecting well over rostrum, with lower transverse emargination and an acute projection below this. Shield design often obscure; when clear with slight indications of median line to rear; admedians complete, sinuate, from sides of anterior lobe, a cross line at 1/2, forking between dorsal tubercles, the inner lines meeting at central rear shield margin, the outer diverging strongly to margin. Submedian line less clear, subparallel to admedian including sinuations, connected to rear with inner side of dorsal tubercle. Laterally the shield with rows and curves of granulations and 2 or 3 partial rings below dorsal tubercles. Dorsal tubercles 20<sub>u</sub> apart; dorsal setae arising a little ahead of rear shield margin, projecting up and central. Forelegs 26<sub>u</sub> long; tibia 6<sub>u</sub> long, with 4<sub>u</sub> seta at 1/2; tarsus 6<sub>u</sub> long, claw 8.5<sub>u</sub> long, slender; featherclaw 5-rayed. Hindlegs 23<sub>u</sub> long, tibia 4<sub>u</sub> long, tarsus 5<sub>u</sub> long, claw 8<sub>u</sub> long. Coxae ornamented with curved lines of granules; sternal line distinct anteriorly; first setiferous coxal tubercles ahead of second and opposite anterior coxal approximation; second tubercles well ahead of line across third tubercles. Abdomen with 60-65 sternites and nearly as many tergites; middorsal ridge extending back from shield, becoming narrower, and ending about tergite 45. Microtubercles present on tergites along central ridge and laterally but absent from troughs beside central ridge. These microtubercles elongate. Sternal microtubercles rounder and hardly reaching rear ring margins. Lateral seta 11<sub>u</sub> long, arising on about sternite 5 behind shield; first ventral seta 38<sub>u</sub> long, on about sternite 20; second ventral 22<sub>u</sub> long, on sternite 33; third ventral 12<sub>u</sub> long, stiff, on ring 5 from rear. Accessory seta 2.5<sub>u</sub> long. Female genitalia 19<sub>u</sub> wide, 13<sub>u</sub> long; coverflap with 10-11 longitudinal ribs; seta 13<sub>u</sub> long.

Male about 120<sub>u</sub> long, with less prominent ridge.

Type locality: England

Collected: Feb. 21, 1964 at Boston, Mass., in quarantine from England and forwarded under USDA #64-7818 and #64-7820

Host: Fagus sylvatica L. (Fagaceae) beech

Relation to host: the mites appeared in preparations made from the underside erineum patches on red-dyed beech leaves

Type material: a type slide, #64-7818, property of USDA  
Paratype slides: one #64-7818, three #64-7820

## Designations on plates -

- AP1 - internal female genital structures
- CS - side view of caudal section
- D - dorsal view of mite
- DA - dorsal view of anterior section
- ES - side skin
- F - featherclaw from below
- Fl - featherclaw and part of tarsus
- GF1 - female genitalia and coxae
- L1 - first left leg
- L2 - second left leg
- S - side view of mite
- SA - side view of anterior section

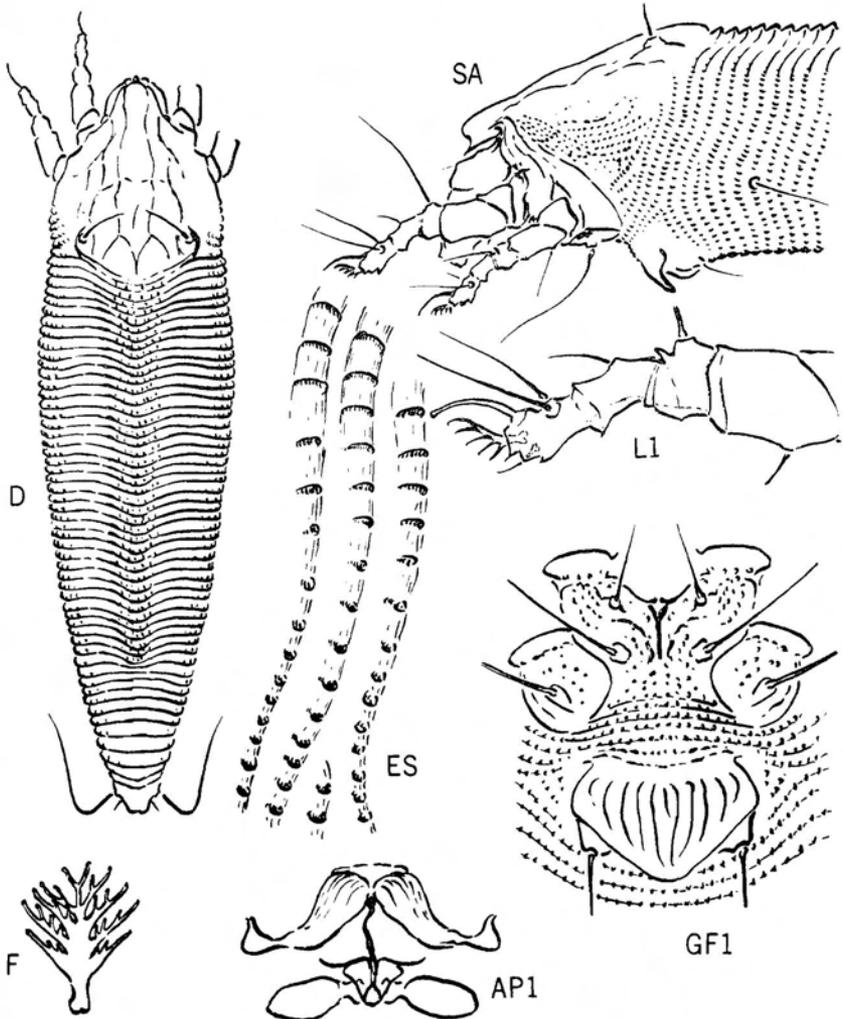


Plate 9 - *Calepitrimerus fagisylvaticus*, new species

## Floracarus ilicis, new species

## Plate 10

From the three species already referred to this genus the new species differs in having smooth forecoxae and having the genital coverflap with a pattern of lines. The other three species have either granulations or spinules on the forecoxae, and granulations on the genital coverflap.

Female about 160<sub>u</sub> long and 60<sub>u</sub> wide, 54<sub>u</sub> thick; a robust species with broad and declivitous (anteriorly) shield; color in life unknown. Rostrum 28<sub>u</sub> long, projecting down; antapical seta 4<sub>u</sub> long. Shield 42<sub>u</sub> long, 55<sub>u</sub> wide, with a short, broad anterior lobe over rostrum base, somewhat emarginate in front in lateral view. Shield declivitous anteriorly below a transverse ridge at 1/4, this ridge extending laterally as a branched line, a series of elongate cells below this ridge around front. Median line complete; admedians complete, sinuate, subparallel with median but farther apart on rear 1/2, the admedians connected to median by the transverse ridge at 1/4, by another cross line at 1/2, and another at 3/4; these lines becoming broader toward rear and ending at rear shield margin. Submedian lines faint. Side of shield with branched lines ending at first rings. Dorsal tubercles 31<sub>u</sub> apart at about 3/4 on shield; dorsal setae 10<sub>u</sub> long, projecting up and dorsocaudad. Forelegs 25<sub>u</sub> long; tibio-tarsus with slight tibial indication below, 10<sub>u</sub> long and with two strong anterior setae, ventrally with a moderately long inner seta; claw 6<sub>u</sub> long, straight, small apical knob, on inner side of featherclaw; featherclaw 5-rayed. Hindlegs 22<sub>u</sub> long, tibio-tarsus 8<sub>u</sub> long, inner seta small, claw 5.5<sub>u</sub> long. Coxae lacking granules and lines; second coxal setiferous tubercles well ahead of lines across third tubercles. Abdomen with about 37 tergites to the third ventral seta ring, and 42 sternites to same ring. Microtubercles on sternites fine and elongate from ring margins, stronger on upper lateral parts of sternites. Tergites forming a broad low central ridge on anterior abdomen, the shallow furrows running a short distance caudad from behind dorsal tubercles. No microtubercles on tergites. Lateral seta 16<sub>u</sub> long, on sternite 4; first ventral seta 44<sub>u</sub> long, on sternite 14; second ventral 6<sub>u</sub> long, on about sternite 26; third ventral 15<sub>u</sub> long, on ring 6 from rear. Accessory seta represented by minute point. Female genitalia 20<sub>u</sub> wide, 12<sub>u</sub> long; coverflap with central longitudinal, a basal pattern of curved lines on each side, the rear fringe apparently crenulate; seta 11<sub>u</sub> long.

Type locality: Fruitland, Florida

Collected: December 10, 1964 by A. E. Graham and sent me by H. A. Denmark

Host: Ilex glabra L. (Aquifoliaceae) low gallberry

Relation to host: the mites are leaf vagrants

Type material: a type slide

four paratype slides

alcohol specimens from which the slides were made

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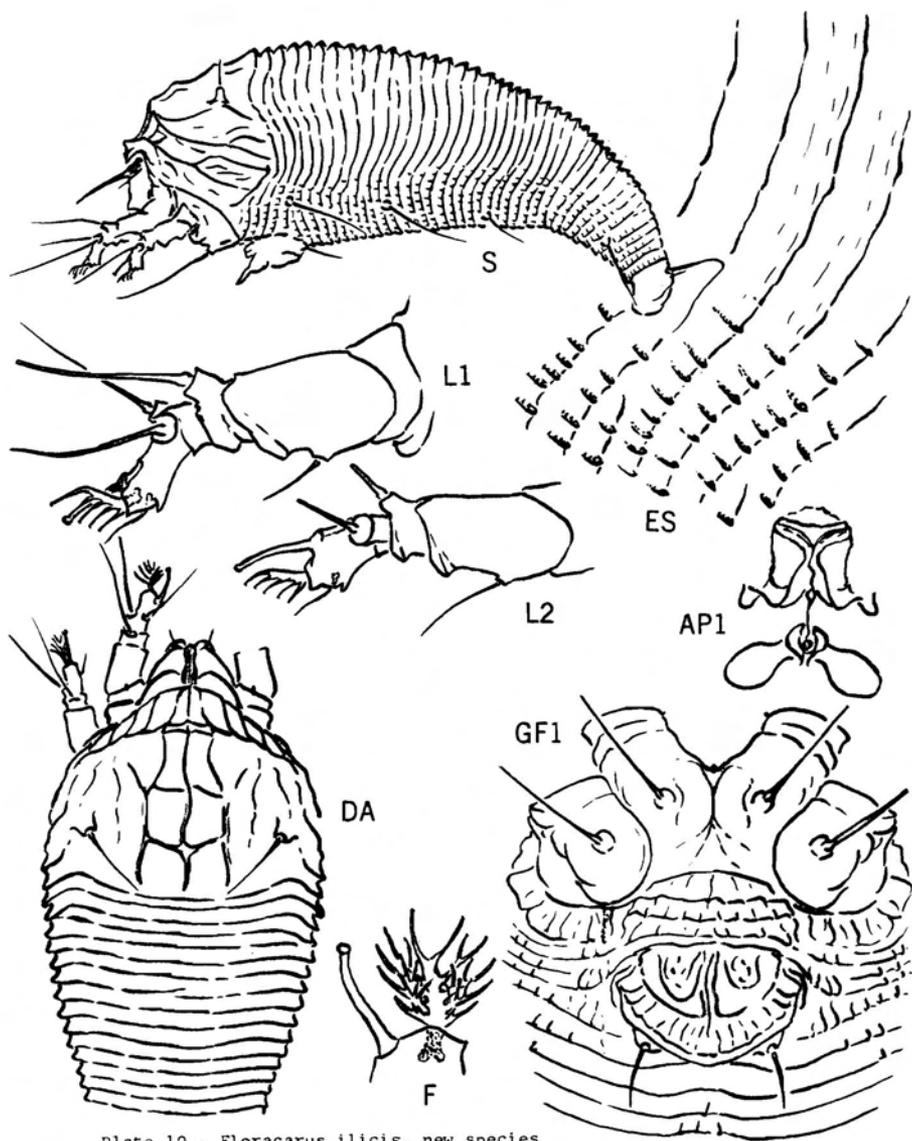


Plate 10 - *Floracarus ilicis*, new species